

means, connected to the address conversion table, for converting the sector address information input from the interface means from the external system into the physical sector number (as identified by the address conversion table, and for accessing the flash memory according to the physical sector number.--

Please replace claim 65 with the following (a marked up version is given in the Appendix):

--65.(Amended) The semiconductor disk device according to claim 64, wherein said address conversion table includes a logical sector address storage section and a physical sector number storage section.--

Please add the following new claims:

--66. A semiconductor disk device comprising:
a non-volatile, electrically programmable and erasable flash memory including a plurality of sectors, wherein a sector is a unit of erasure for the flash memory;
an interface whereby data and addresses are exchanged with an external system;
a sector map comprising an identification between each of one or more of the sectors and a respective alternate sector;
a controller connected to the interface, the sector map and the memory, whereby in response to receiving an address from the interface for accessing one of said one or more sectors, the controller substitutes access to the respective alternate sector of the memory according to said identification.--

In the Abstract

Please replace the Abstract with the following (a marked up version is given in the Appendix):

ABSTRACT

A [system of Flash EEprom memory chips with controlling circuits] semiconductor disk device serves as non-volatile memory such as that provided by magnetic disk drives. Improvements include selective multiple sector erase, in which any

combinations of Flash sectors may be erased together. Selective sectors among the selected combination may also be de-selected during the erase operation. Another improvement is the ability to remap and replace defective cells with substitute cells. The remapping is performed automatically as soon as a defective cell is detected. When the number of defects in a Flash sector becomes large, the whole sector is remapped. ^{using a sector defect map or defect map table} In yet another embodiment, the sector remapping is performed by the microprocessor. The microprocessor looks at incoming address and compares it against the sector defect map. If a match occurs, it does not issue the command to the controller but instead substitutes the alternative sector. Yet another improvement is the use of a write cache to reduce the number of writes to the Flash EEprom memory, thereby minimizing the stress to the device from undergoing too many write/erase cycling.

BLE
end

286
p 23, 233
p 14, 170
p 24,
23-8